

INITIAL STATEMENT OF REASONS

FOR ADOPTION OF REGULATIONS ESTABLISHING AND IMPLEMENTING A GREENHOUSE GASES EMISSION PERFORMANCE STANDARD FOR LOCAL PUBLICLY OWNED ELECTRIC UTILITIES

California Energy Commission
Docket No. 06-OIR-1
February 2007

I. STATEMENT OF SPECIFIC PURPOSE AND RATIONALE

Senate Bill 1368 (Stats. 2000, ch. 598) establishes sections 8340 and 8341 of the Public Utilities Code, requiring the California Energy Commission (Commission), in consultation with the California Public Utilities Commission (CPUC) and the California Air Resources Board (CARB), to establish a greenhouse gases emission performance standard (EPS) and implementing regulations for all long-term baseload generation commitments made by local publicly owned electric utilities. The legislation directs the Commission to establish the performance standard as one not exceeding the rate of greenhouse gases emitted per megawatt-hour associated with natural gas-fired combined-cycle combustion turbine baseload generation. The law requires that the Commission's standard be consistent with that adopted by the California Public Utilities Commission in a companion proceeding. The implementing regulations are required to include a greenhouse gases emission performance standard and an output-based methodology for calculating and enforcing the emission performance standard.

The Commission is proposing to adopt the following regulations implementing a greenhouse gases emission performance standard for local publicly owned electric utilities to comply with Public Utilities Code sections 8340 and 8341.

II. DOCUMENTS AND REPORTS RELIED UPON

The Commission has relied upon the following technical, theoretical, or empirical studies, reports, or similar documents in drafting the proposed regulations:

California Energy Commission, *Renewables Portfolio Standard Eligibility Guidebook*, Second Edition. December, 2006. CEC-300-2006-007-ED2SD.

California Energy Commission, *Renewable Energy Program Overall Program Guidebook*. April, 2006. CEC-300-2006-008-F.

U.S. Department of Energy, *Biomass Energy Data Book: Edition 1*. Prepared by the Oakridge National Laboratory. September, 2006.

U.S. Climate Change Technology Program, *Strategic Plan*. Joint Publication of the U.S. Departments of Commerce and Energy and the President's Office of Science and Technology Policy. September, 2006.

Spath, Pamela L. and Margaret K. Mann. *The Net CO₂ Emissions and Energy Balances of Biomass and Coal-Fired Power Systems*. National Renewable Energy Laboratory. August, 1999.

California Public Utilities Commission, *"Interim Opinion on Phase I Issues: Greenhouse Gas Emissions Performance Standard"*. Decision 07-01-039, January 25, 2007. Rulemaking 06-04-009.

IPCC 2006, 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Prepared by the National Greenhouse Gas Inventories Programme, Eggleston H.S., Buendia L., Miwa K., Ngara T., and Tanabe K. (eds). Published: IGES, Japan.

III. CONSIDERATION OF REASONABLE ALTERNATIVES, INCLUDING THOSE THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

Before adopting the proposed regulations, the Commission must determine that no alternative considered by it would be more effective in carrying out the purpose for which the action is proposed or would be as effective as and less burdensome to affected private persons than the proposed action.

To date, the Commission is not aware of any reasonable alternatives to the proposed regulations that would be more effective or less burdensome than the proposed regulations in carrying out the requirements of Public Utilities Code sections 8340 and 8341. Additionally, no person or party has otherwise identified or brought to the attention of the Commission any reasonable alternatives. The proposed regulations do not affect private persons or small businesses.

TECHNOLOGY AND ALTERNATIVES

The proposed regulations would not impose any specific technology or equipment requirement. The proposed regulations simply require that any covered procurement meet a carbon dioxide emission standard of 1100 pounds per megawatt hour; they do not dictate what technology or fuel a facility should use to meet this standard.

IV. IMPACT ON BUSINESS

The Commission did not identify any significant adverse economic impacts upon business from the proposed regulations. The proposed regulations affect local publicly owned electric utilities and do not impose any obligations on businesses. Businesses operating powerplants that are designed and intended to operate at less than 60% capacity factor or that meet the EPS will continue to be able to sell their electricity to local publicly owned electric utilities. Those few businesses operating

baseload powerplants that do not meet the EPS are able to sell pursuant to existing contracts. Additionally, they are still able to sell their electricity to local publicly owned electric utilities in new contracts with terms that are under 5 years and they can sell their electricity to entities not covered by SB 1368 or out of state. Therefore, any impact to businesses from the proposed regulations would be minimal. The Commission has solicited the comments of staff and affected entities with the specific goal of considering all means to minimize any potential impacts of the regulations. The Commission is unaware of any alternatives which would present less of an impact upon small business.

V. DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS

There are no comparable federal regulations or statutes establishing a greenhouse gases emission performance standard and restricting the purchase of electricity by local publicly owned electric utilities. There is a federal regulation that requires certain entities, including local publicly owned electric utilities, to purchase electricity offered by qualifying facilities. 18 C.F.R. Part 292. The proposed regulations contain an exemption for such facilities. Thus, there are no duplications or conflicts with any federal regulation or statute.

VI. DISCUSSION OF SPECIFIC REQUIREMENTS

2900. Scope

This section explains that Article 1 only applies to long-term financial commitments with units 10 MWs and larger. The Commission determined that given the tight deadline for establishing and implementing these regulations, and administrative constraints, it was necessary to focus on powerplants with the greatest greenhouse gases emissions. This was determined to be facilities of 10 MWs or larger. The Commission has reserved Article 2 to address facilities of less than 10 MWs at a later time.

2901. Definitions

This section provides definitions necessary to understand the key terms used in the regulations.

2902. Greenhouse Gases Emission Performance Standard

This section contains two central features of the regulation and a few clarifying sections:

Subsection (a) sets the performance standard. The greenhouse gases emission performance standard is set at 1,100 pounds of carbon dioxide per megawatt hour. This standard of performance for baseload generation is the same as that adopted by the CPUC and was reached by evaluating the performance of existing combined cycle natural gas baseload powerplants throughout the west. Special attention was paid to the performance of units within California, and the standard was set so that new, clean units in adverse conditions such as high altitude or hot temperatures would not be crowded out by a standard that was too restrictive. The CPUC and the Commission decided to limit the standard to carbon dioxide emissions because this pollutant makes up the overwhelming majority of greenhouse gas emissions and is the most reliable and efficient measure of greenhouse gas performance. Additionally, given the short timeframe in which the agencies had to establish and implement the EPS, it would have been administratively

infeasible to address all six pollutants. As required by law, the standard is based on an evaluation of the carbon dioxide emissions from natural gas-fired combined cycles, but the standard itself is fuel-neutral; with certain exceptions specified in the regulations, it applies to any type of baseload powerplant. This provision forms the crux of the regulations and is specifically required by SB 1368.

Subsection (b) explains to what entities and to what kinds of financial commitments the emissions performance standard applies. Pursuant to SB 1368, the EPS applies to any long-term financial commitment entered into by a local publicly owned electric utility (POUs) for baseload generation. As described in these regulations, a local publicly owned electric utility triggers application of the EPS when it enters into a covered procurement. This is a financial commitment, either a new ownership investment or a new or renewed contract, with a baseload powerplant for a term of 5 years or longer.

This provision is consistent with the CPUC's decision and uses the overall logic that the same types of greenhouse gas emission-related financial risks to customers are assumed by similar types of investments to both owned units and contracted resources. The Commission slightly modified its requirements for retrofit investments in owned units to take into account the fact that POUs own relatively more of their generation than do the Load Serving Entities regulated by the CPUC. The POUs brought to the attention of the Commission numerous kinds of investments that they are required to make to comply with existing multi-jurisdictional covenants and with investments that have a side benefit of making a modest increase in net capacity.

Subsection (c) clarifies that when a local publicly owned electric utility enters into a contract that identifies more than one powerplant, each powerplant must meet the EPS on its own. This clarifies that a POU cannot combine and average the emissions from all powerplants identified in a single contract. Without this constraint, a POU could purchase electricity from non-compliant powerplants if they could balance out the emissions with compliant powerplants, thus circumventing the intent of SB 1368.

Subsection (d) identifies how the term of a contract is to be calculated. The term of a contract shall be determined by including the length of time from the date of first delivery through the date of last delivery, even if there are intervening periods during which there are no deliveries. This is how the CPUC is calculating contract terms and the Commission adopted it here for consistency.

Subsection (e) requires that powerplant emissions be calculated based on intended operations and not on a hypothetical, best performance scenario that fails to take into consideration factors specific to the powerplant being analyzed. Emissions per megawatt hour are higher when a plant is operating at low levels, such as when it is starting or ramping. Emissions per megawatt hour start to drop when the unit is operated at an intermediate level, and are lowest when it is fully on at a maximum performance of a "full load heat rate." Since the purpose of SB 1368 is to dissuade certain long-term investments in powerplants that do or will exceed the EPS, it is important that the calculation of a powerplant's greenhouse gases emissions be based on an

operating scenario that is likely to be utilized; thus leading to an accurate estimate of likely emissions.

2903. Compliance with the Emission Performance Standard

This section identifies how a powerplant's greenhouse gases (GHG) emissions will be calculated. Except in certain circumstances described later, a powerplant's GHG emissions are to be calculated by dividing the powerplant's annual carbon dioxide emissions in pounds by the powerplant's annual average net electricity production. This provision is necessary to provide guidance and consistency for such calculations.

Subsection (b) identifies those technologies the Commission has determined will automatically comply with the EPS. These are technologies considered to be RPS-eligible under the Commission's RPS program, except for Hybrid Systems, which allow for a certain percentage of fossil fuel use and, thus, cannot be automatically found to comply. Additionally, technologies using biomass, biogas, or landfill gas as well as hydroelectric and nuclear powerplants are determined to automatically comply with the EPS. This provision is necessary to reduce administrative burdens on both the Commission and on the local publicly owned electric utilities. The facilities identified in this subsection are clean facilities in terms of greenhouse gas emissions; therefore it would be unnecessarily burdensome to require the POUs to provide calculations and documentation every time there was a financial commitment in a powerplant utilizing one of these technologies or fuels.

2904. Annual Average Carbon Dioxide Emissions

This section specifies how to calculate a powerplant's annual average carbon dioxide emissions.

It requires that, except as specified in subsection (b) and (c), emissions be based on the carbon dioxide produced on an annual average basis by each fuel used in various pieces of electricity production equipment including boilers, combustion turbines, reciprocating or other engines, and fuel cells. The types of fuels included in the calculation shall include primary and secondary fuels, backup fuels, and pilot fuels and the calculation shall assume that all carbon in the fuels is converted to carbon dioxide. The calculation does not need to include fuels used in ancillary equipment such as fire pumps, emergency generators, or vehicles because these types of equipment do not directly relate to the production of electricity.

Subsection (b) specifies how to calculate the carbon dioxide emissions of certain powerplants that use more than one fuel. It requires that for powerplants that are not eligible for renewable portfolio standard certification and that use biomass, biogas, or landfill gas in combination with other fuels, the carbon dioxide emissions calculation shall be based solely on the emissions from all fuels used that do not constitute biomass, biogas or landfill gas. Such facilities do not have to include emissions from these types of fuels in their overall calculation because the use of such fuels has been found to not lead to an increase in greenhouse gases compared to the emissions released if they had been disposed of in another manner. This approach, therefore, complies with the intent of SB 1368.

Subsection (c) explains how to calculate the carbon dioxide emissions of powerplants that will sequester carbon dioxide. The subsection specifies that the emissions calculation shall exclude

any carbon dioxide that is projected to be successfully sequestered. The subsection then proceeds to define what will be considered a successful sequestration project. A sequestration project will be found to successfully sequester carbon dioxide emissions if it: 1) includes the capture, transportation, and geologic formation injection of carbon dioxide emissions; 2) complies with all applicable laws and regulations; and 3) has an economically and technically feasible plan that will result in the permanent sequestration of carbon dioxide once the sequestration project is operational. SB 1368 mandates this approach and it is consistent with what the CPUC is doing.

2905. Annual Average Electricity Production

This section specifies how a powerplant's annual average electricity production shall be determined. It requires that electricity production be based on all of the following: 1) the net electricity available for use, onsite or at any host site, in any commercial or industrial process; and 2) all net electricity available for sale or transmission from the powerplant. This ensures a powerplant's electricity production is based on the entirety of a powerplant's electricity generation, except for any parasitic load.

Subsection (b) specifies how the electricity production from a cogeneration powerplant shall be calculated. The electricity production from a cogeneration powerplant is the sum of the megawatt hours produced by the powerplant and the useful thermal energy output as expressed in megawatt hours.

Subsection (b)(1) specifies how a cogeneration powerplant's useful thermal energy output is to be determined. If the powerplant is a topping cycle plant, its useful thermal energy is the thermal energy that: 1) is made available for an industrial or commercial process, and includes the net of any heat contained in condensate return or makeup water; 2) is used in heating, including space or domestic hot water heating; or 3) is used to cool an area, including the thermal energy used by an absorption chiller. If the powerplant is a bottoming cycle plant, its useful thermal energy is the thermal energy used by any industrial process and any fuel used for supplemental firing. Subsection (b)(2) directs that a conversion factor of 3.413 million British thermal units per megawatt hour shall be used in determining a cogeneration powerplant's useful thermal energy output. This provision comports with the direction provided in SB 1368 to use an output-based methodology that ensures that the calculation of greenhouse gases emissions from cogeneration powerplants recognizes the total usable energy output of the process and includes all greenhouse gases emitted by the facility in the production of both electrical and thermal energy.

2906. Substitute Energy

This section specifies the limited circumstances under which the use of substitute energy will be allowed. Subsection (a) explains that the use of substitute power is only appropriate under the circumstances identified in Subsections (b).

Subsection (b) states that substitute power may be used in the following circumstances: 1) when there is a contract with one or more powerplant, each of which are EPS-compliant; 2) when there is a contract with a non-renewable or dispatchable renewable resource, substitute energy purchases of up to 15% of the forecast energy production of the identified powerplant is allowed

if the contract permits the use of system energy only in the following circumstances: a) when the identified powerplant is unavailable for operational or efficiency reasons (such as forced outage, scheduled maintenance, etc.) or b) when needed to meet operating conditions specified under the contract such as a set number of start-ups, ramp rates, operating numbers, et cetera; or 3) when there is a contract with an intermittent renewable resource (defined as solar, wind, or run-of-river hydroelectricity) system energy purchases are allowed in an amount up to, but not exceeding, the total expected output of the identified powerplant, when combined with the actual output of the identified powerplant. Allowing the use of substitute energy in these limited circumstances is consistent with SB 1368, and such allowance is necessary to provide some needed flexibility to ensure reliability. The use of substitute power and system energy in the limited circumstances outlined above ensures that these regulations can be applied in a practical manner and comports with the intent of SB 1368.

2907. Qualifying Facilities

This section clarifies that the EPS does not apply to any qualifying small power production facility or qualifying cogeneration facility, as defined by federal law. This provision is necessary to ensure that these regulations do not conflict with particular provisions in the Public Utilities Regulatory Policies Act of 1978 and implementing regulations, which require certain entities, including local publicly owned electric utilities, to purchase electricity offered by qualifying facilities. This provision also comports with direction given in SB 1368.

2908. Public Notice

This section requires that a local publicly owned electric utility must notify the Commission of the time and place of public deliberation of an investment or contract commitment that may be subject to the emission performance standard. It also requires that the utility provide the Commission copies of any documents that will be used in the course of public deliberation to assess whether the investment or contract is subject to the standard and, if so, whether it meets the standard; these copies will be posted on the Commission's website. In lieu of providing copies of the documents to the Commission, the utility may provide the uniform resource locator (URL) at which the public may access the documents.

The purpose of this section is to ensure that there is sufficient public notification for pending actions by the utilities to allow for public participation at the decision making stage. While local publicly owned electric utilities routinely deliberate such investments in public and are required by numerous statutes to do so, postings on the Commission's website provide the broader public an opportunity to learn of and review the investments being considered by all of the state's utilities at a single location. As a result, increased public oversight is provided at negligible cost to both the utilities and the Commission. To the extent that such review augments and substitutes for public review after the commitment has been made, the administrative burden on all parties is further reduced.

The documents required to be submitted to the Commission for posting prior to public deliberation are those that the governing authority of the local publicly owned electric utility are provided by utility staff or management to determine whether the proposed investment is subject to the standard and, if so, whether it is compliant with it. Their availability allows any third party

to evaluate for themselves whether the proposed commitment is compliant with the regulations and to request additional information from the utility if so desired.

2909. Compliance Filings

This section requires that, within ten business days of entering into a commitment that is subject to the standard, the POU provide an attestation by an agent of the POU that the commitment is compliant with the standard. It also requires that the POUs submit the documentation used by utility staff, management, and its governing board to determine whether or not the commitment is subject to the standard and, if so, that it is compliant with it.

Subsection (a) requires that the attestation specify the following: 1) that the governing body has reviewed and approved the covered procurement and compliance filing in a public meeting; 2) that the compliance filing does not contain a material misstatement or omission of fact; 3) that the covered procurement complies with these regulations; and 4) that the covered procurement contains contractual terms that would void the contract and terminate all energy deliveries if the Commission finds that the covered procurement does not comply with these regulations. This Subsection provides additional incentive for due diligence on the part of utility staff, management, and its governing authority.

Subsection (b) requires the compliance filing to contain the documentation identified in either Section 2908(c) or (d), depending on whether the covered procurement is a new ownership investment or a new or renewed contract. At a minimum, this documentation will include what was submitted to the Commission pursuant to section 2908. In addition, however, it will include any additional documentation generated subsequent to public deliberation of the proposed commitment including any additional documentation that the utility's governing authority thought necessary in order to demonstrate compliance.

Subsection (c) requires additional documentation if the covered procurement utilizes carbon sequestration pursuant to section 2904(c). This documentation includes information sufficient to demonstrate that subsections 2904(c)(1) through (3) have been met.

Subsection (d) requires additional documentation if the covered procurement permits substitute energy purchases pursuant to section 2906.

The provision of this information is necessary in that it will be the basis of the Commission staff's evaluation of the commitment as it pertains to the standard and these regulations, an evaluation that the Executive Director will consider in making a recommendation for approval or rejection pursuant to the requirements of Section 2910.

2910. Compliance Review

This section requires that within 30 days of receiving a complete compliance filing that the Commission act upon the Executive Director's recommendation that the commitment be found either compliant or non-compliant.

This provision is necessary as formal ruling upon the compliance of an ownership investment or

contractual agreement provides certainty to parties regarding the legality of the commitment, reducing if not eliminating the possibility of the commitment being found in violation of the law and nullified. This reduces financial and legal risk to both parties to the agreement and results in lower costs. The requirement that the Commission rule upon the compliance of the commitment provides yet another opportunity for public input in the compliance determination process; a process that results in such a determination being made by the Executive Director would be less amenable to public participation and scrutiny. The thirty-day time period allowed strikes a balance between the time needed by the Commission and its staff to evaluate the commitment with respect to the standard, meet public noticing requirements, etc., and the need to minimize the risks (i.e., the costs of an adverse finding) faced by utilities and the entities with which they contract. If more time is needed to determine a covered procurement's compliance with the EPS, the Commission has the discretion to assign the matter for further hearings before making a determination.

2911. Compliance Investigation

This section creates a complaint and investigation process which ensures that compliance can be verified, if necessary, after a commitment has been made and, in some cases, been found compliant. It provides a procedural remedy in such cases as a utility not making a compliance filing for a commitment that it held not to be subject to the standard, misrepresentation of material facts in a compliance filing, etc.

2912. Case-by-Case Review for Reliability or Financial Exemptions

This section allows local publicly owned electric utilities to file a petition to exempt a particular covered procurement from the emission performance standard if they can demonstrate that the covered procurement is necessary to address system reliability concerns, or that there are extraordinary circumstances, catastrophic events, or threat of significant financial harm that will arise from application of the EPS that was not contemplated during preparation of these regulations. Once the petition is filed, the section directs the Executive Director to review the petition, ensure its completeness, and provide a recommendation to the Commission, who shall vote on that recommendation within 30 days after receipt of the petition. This provision is necessary to ensure that application of the EPS will not result in significant impacts to system reliability or overall costs, and comports with direction from SB 1368.